The Herpetological Papers of

C. S. RAFINESQUE

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16. *Description of the Spelerpes or Salamander of the caves of Kentucky. By* C. S. RAFINESQUE.

In 1821 I discovered a new Salamander, dwelling permanently in the dark caves of limestone near Lexington. It never comes out to the light, being found there in summer. Its eyes are calculated for this life: they are large elliptical, with a large black pupil like the cats to shade them from the least access of light. It is called *Cave Puppet* in Kentucky, while the other Salamanders are named Ground Puppets. Several specimens were preserved in the Museum of the Lexington University, presented by Dr. Crockatt.

It appears to form a peculiar N. G. or S. G. among the Salamanders, which I call *Spelerpes*, meaning *Cave reptile*. Head round, broad and flat; mouth very large, split to the neck, jaws with small teeth, obtuse in the upper jaw, acute in the lower. Feet semi-palmated, anterior with four toes, hinder with five toes. Tail cylindrical, slightly compressed at the base. Eyes oblong with a pupil.

Spelerpes lucifuga. Entirely orange colour, covered with small oblong black dots all over, jaws equal. Tail very long, five eighths of whole length, which is from four to six inches.

Volume I, number 2, pages 63-4, 1832

11. ERPETOLOGY.—On the Salamander of the hills of East Kentucky. *S. lurida*. by C. S. R.

I discovered in 1823 a new land salamander in my excursion to the falls of the river Cumberland, dwelling in the hills near that river in East Kentucky, among logs and rubbish in woods.

It is a sluggish and ugly animal, but rare and not easily detected among dried leaves, being of a dull color, only 3 or 4 inches long.

Salamandra lurida. Entirely grey with two rows of black spots on the back, tail as long as the body with blackish rings, belly whitish. The tail is rounded as in the land salamanders, and the toes are 4 and 5 as in the whole genus.

I take this opportunity to state that my sal. or sp. *lucifuga* of last No. is different from the *Salamandra longicauda* of Green, having compared them, I find by specimens of this last, that the dots are larger, fewer, rounded, and lacking beneath; head smaller not so flat, mouth smaller with minute acute

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teeth in both jaws; but the eyes are nearly alike and both have the nictitant membrane very properly compared to that of the owls by Green.

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12. Description of two new genera of Soft Shell Turtles of North America.— By C. S. Rafinesque.

APALONE and MESODECA.

The following account was prepared for the Philosopical Society of N. York in October 1816; but not published at the time. It is now given as written 16 years ago.

The Zoologists had preserved the Genus *Testudo* of Linneus, till Dumeril in 1806 established the G. *Chelonias* for the Sea turtles with feet like fins, the G. *Chelys* for the T. *matamata*, and the G. *Emys* for all the turtles with 5 moveable palmated toes. Lately the G. *Trionyx* has been proposed by Geoffory for the soft shell turtles with 3 toes and claws. But last year I proposed in my analysis of Nature (Palermo 1815) to divide the Turtles into 15. G. as they offer so many other important Characters.

They were 1 *Chelonias* D. 2 *Testudo* D.

3. *Gopherus*, Raf. With flat round nails. Type. T. *polyphemus* of North America.

4. *Chelonura*, Raf. with long tails 5 & 4 claws. the bills serrated. Type T. *indica*, many Sp. here blended.

5. *Chelyra*, Raf. Soft shell Sea turtles with sulcated back. Type T. *coriacea*.

6. *Trionyx* of *G*.

7. *Chæliphus*, Raf. Water turtles with Valved shells 5 claws and toes to all the feet.

8. *Uronyx*, Raf. an anterior valve to the shell, toes and claws 5 and 4, tail with a claw. T. Scorpioides, &c.

9. *Didicla*. Raf. Bivalve lower shell, toes 5 and 4. Type T. *clausa*, *odorata*, &c.

10. *Monoclida*, Raf. Lower shell valvular anteriorly, toes 5 & 4. T. *retziana* &c.

11. *Emyda*, Raf. or *Emys* D.

12. *Chelycla*, Raf. or Chelys D.

13. *Chemelys*, Raf. Warty Scales, no valves 4 toes to all the feet. T. verrucosa &c.

14. *Chelopus* Raf. No valve, toes not palmated 4 and 5. T. *Punctata* &c.

15. *Cheliurus*, Raf. No valves, feet palmated a long scaly tail. T. Serpentina &c.

This year I have discovered in my journey to the falls of the Hudson and to Lake Champlain, a new Soft Shell turtle which has 5 toes instead of three as *Trionyx*, and which I propose to call *Apalone*. Bartram has long ago described and figured another Soft shell turtle with 5 claws, which has been commonly blended with the T. *ferox*, this must form also another Genus *Mesodeca* by having 10 Scales in the middle of the back.

1 N. G. *Apalone* Raf.

The name is contracted from *Apalochelone* meaning Soft turtle.

Char. G. Body and limbs soft without scales. Nose proboscidal, jaws without a bill. Upper Shell smooth soft with a small keel anteriorly. Lower Shell anterior, body denudated behind. Five palmated toes to all the feet, with small claws. Tail short corrugated.

Apalone Hudsonica, Raf. Upper shell rounded elliptical, flat, entire, yellowish with brown spots, and a circular black line near the margin. Two oblong occulated spots before and behind the eyes. tail obtuse mucronate shorter than the shell.

A very pretty small species from 2 to 6 inches long, found in the River Hudson between the falls of Hadley, Glen and Baker, and further up to the source. It is called mud turtle and not eaten. It is a lively pretty animal, quite harmless, as it cannot bite, having no horny hard jaws. It dwells in the mud and sand, and buries itself under it in winter. It feeds on small shells and fishes.

Body olivaceous striped and dotted with brown; but entirely smooth without warts. Neck retractible and elongated when extended, grayish clouded with rufous as well as the feet. Head small with 2 singular large spots one before and one behind each eye, oblong yellow with a black margin, appearing like as many eyes; while the true eyes between them are small round with a yellow iris. Nose tubular like a proboscis extending beyond the mouth, and truncated with 2 round nostrils. Mouth large, with thin soft lips. The hind part of the body is denudated beneath, the lower shell extending only half way from before and is blueish white. Vent round, tail conical short thick rugose obtuse mucronate. Feet spotted, toes black, 5 unequal with small claws. The upper shell is very entire and prettily spotted, the margin is yellowish unspotted, then comes a circular black line blackish but spotted of brown, while the centre is olivaceous yellow with many round spots occulated and clouded by having a brown margin, with grey dots within. The small half keel extends only to the middle or as far as the lower shell below.

II. N. G. MESODECA Raf.

The name means *middle* with *ten* Scales.

G. Ch. Body and limbs soft upper shell soft but with 10 hard scales in the middle, and 10 pair of hard lateral ribs,

with many horny warts before and behind. Lower shell hard and horny in the middle. Head with lateral compartiments above and lateral contractible warts. Nose proboscidal. Mouth with horny jaws. Five palmated toes to all the feet with crooked claws.

Mesodeca bartrami, Raf. Upper shell elliptical entire brown unspotted. Head long, neck rugose, warty.

Synonyms. Great Soft shell Tortoise Bartram's travels in Florida (Philadelphia 1791) page 177 to 179 fig. 4 and 5.

Testudo ferox of many authors but several species have been blended by them, found in Carolina, Alabama, and Louisiana, while Bartram says he found this only in East Florida. The T. *ferox* had been described and figured by many authors; but their figures and descriptions must be compared and revised. When not copied from Bartram they apply to other species or the true T. *ferox* of L. first figured in Philol. Trans. vol. 6. fig. 10. See also Lacepede, vol. 1. tab. 5. and Schoepf. turtles, tab. 19.

This turtle of Bartram cannot more be the T. *ferox* which is a true *Trionyx*, than the *Apalone*! For the complete description and history of this species see Bartram's page and fig. quoted. It is one of the most explicit descriptions of his book, and the 2 figures of the body and head are no doubt correct. It is a large sp. 2½ feet long and weighing from 30 to 40 lb. excellent to eat. Although carnivorous it is no more ferocious than all the other turtles and terrapins feeding on prey.

New-York, October, 1816.

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21. Erpetology.—On 3 New Water Salamanders of Kentucky.

The Salamanders are very numerous in North America, and although we know now about 40 sp. of them, as many more remain undescribed. Prof. Green has found some new ones this year in West Pennsylvania, among which, is a remarkable new Genus with a tubular tongue and callose toes, which he will describe by the name of Glossiphus. I have described already 2 land Salamanders, in N 1 and 2: I will now add a N. G. and 2 N. Sp. of water Salamanders, making 5 from Kentucky. I propose to give hereafter good figures and ample description of them.

N. G. Eurycea Raf. Mouth very large with many rows of small teeth Opercules a round hole on each side of the neck. Feet with 4 and 5 toes Tail conical carinate above—*Sp. E. mucronata* R. Upper jaw longer nucronate, eyes very small round, body marbled of two shades of brown tail one third of total length—In the river Kentucky. Whole length 21 inches.

The 2 N. Sp. belong to the G. or S. G. *Triturus* (Triton of some but not Lin.) or Salamanders with compressed tails.

1. *S.* or *Tr. lutescens* R. Entirely of a dirty pale yellow, without spots, tail equal to the body.—In West Kentucky in rocky limestone springs in the barrens or glades, 5 to 6 inches long.

2. *S.* or *Tr. nebulosus* R. Blackish with pale or brown clouded spots on the back, tail nearly conical short one third of total length.—In small streams and fissures of rocks in the knobs of West Kentucky, length 3 to 4 inches. C. S. Rafinesque.

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106. NEW LIZARD FROM KENTUCKY.

It was observed in 1823, on the Knobhills of West Kentucky not far from the Mammoth cave. It is called scorpion and erroneously deemed poisonous, like most of our Lizards. It is ra-

ther sluggish and creeps on the ground, I did not see it on trees. I refer it to the Genus *Stellio*, but with some doubt, perhaps it might form a S. G. *Lopherpes*, R. by its flat body with scales not imbricated, and cylindrical tail with scales imbricate and carinate. *Lopherpes* means reptile of the hills.

Stellio dicyanelis or *Lopherpes dicyanelis* Raf. Head brown above, white beneath with some black dots, two large blue spots on the sides of the throat, back cinereous, two rows of large brown spots on the sides, belly white, tail a little longer than body ringed of brown and cinereous.

Length of the head and body 3 inches, tail 4, total 7 inches. Head and body flattened with small equal scales not carinate nor imbricate. Tail cylindrical with imbricate carinate scales. Feet long with some white and black lines behind. C. S. R.

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